VISUAL IMPACT ASSESSMENT
Final Draft

INTERSTATE 15 MANAGED LANES

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Caltrans District 11

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I. PURPOSE OF STUDY

The purpose of this study is to assess the visual impacts of the proposed project and to propose measures to mitigate any adverse visual impacts associated with the construction of operational improvements and Managed Lanes on Interstate 15 (I-15) in San Diego County on the visual environment **(Figure 1)**.

II. PROJECT DESCRIPTION

The project proposes to construct four managed lanes in the freeway median of I-15 from 0.3 kilometers (0.2 miles) south of SR-163 in San Diego to 1.2 kilometers (0.8 miles) south of SR-78 in Escondido. The project limits are from 1.6 kilometers (1.0 miles) south of SR-163 to SR-78 **(Figure 2).** The project requires outside widening of the existing freeway lanes on at least one side and sometimes both sides. Additional right-of-way will be required for temporary construction easements, drainage easements, slope easements, soil nail wall easements, and noise barrier construction.

The typical proposed cross section consists of a managed lane facility (4 managed lanes with two shoulders) located in the existing freeway median separated from the main lanes by fixed concrete barriers. The width of the typical freeway section would increase from 49.3m (162') to 65.8m (216'). The typical number of lanes would increase from 8 to 12. The proposed facility would be have a maximum width of 18 lanes. Most existing freeway ramps will be realigned to accommodate the proposed widening.

Retaining walls will be required where existing right-of-way will not accommodate relocated 1:2 slopes. The height of these walls is expected to be up to 12m (39'). In addition, median retaining walls will be required in areas where there is an existing split vertical alignment. These walls are also expected to be 3-5m (10-16') in height.

Most overcrossing structures will be demolished and replaced by new structures. Overcrossing structures that will remain are H Avenue, Ammo Road, and Miramar Way.

Existing undercrossing structures will be modified or reconstructed. Undercrossing structures will be typically be widened on both the inside and the outside. The Bernardo Center Drive southbound undercrossing structure will be removed and reconstructed due to existing unstable soil conditions.

Direct access ramp structures (DAR) will be constructed in five locations: Hillery Street, Ted Williams Parkway, Rancho Bernardo Drive, Del Lago Boulevard, and Hale Street. These structures will be part of grade separated interchanges that will provide buses and high occupancy vehicles direct access to the managed lanes on ramps that will extend to the freeway median. The direct access structures to be located in State right-of-way at Hillery Street, Del Lago Boulevard, and Hale Street will be included in this visual assessment. The other direct access structures will be assessed in another environmental document prepared by the Metropolitan Transit Development Board (MTDB).

Transit facilities near the freeway are proposed at each direct access ramp location. Each will consist of a parking lot, access roads, and a number of bus platforms. The transit station at Del Lago Boulevard will be constructed within existing State property currently used as a park and ride lot and will be included in this visual assessment. The other transit facilities will be assessed in the document prepared by MTDB.

Noise barriers have been proposed for several segments of the project. A number of preliminary barriers were evaluated using a "feasible/reasonable" analysis to determine if they would be effective in mitigating noise impacts (feasible) and whether they would be an cost effective site specific solution (reasonable) according to

Caltrans policy criteria. Barriers determined to be feasible and reasonable will be evaluated in this study.

Traffic hardware such as changeable message signs, video cameras, and electronic toll readers are proposed project features intended to maximize operational efficiency.

Operational facilities will be needed to accommodate moveable barrier machines. A new overcrossing structure is required south of "H" Avenue to provide access to an existing Caltrans facility where they will be stored and maintained. A portion of the freeway median at Citricado Parkway will be used to store the machines at the northern end of the movable median barrier below the grade of the freeway. Temporary barrier machine storage is proposed at the southern terminus of the project at Ted Williams Parkway DAR. The storage area would be located in the freeway median, and would be screened from traffic by a masonry wall 3m (10') in height. At the northern end, the barrier machines would be temporarily stored in the median with no screen walls currently being proposed.

III. ASSESSMENT METHOD

The process used in this visual impact study generally follows the guidelines outlined in the publication "Visual Impact Assessment for Highway Projects", Federal Highway Administration (FHWA), March 1981.

Six principal steps required to assess visual impacts were carried out. They are as follows:

A. Define the project setting and viewshed.
B. Identify key views for visual assessment.
C. Analyze existing visual resources and viewer response.
D. Depict the visual appearance of project alternatives.
E. Assess the visual impacts of project alternatives.
F. Propose methods to mitigate adverse visual impacts.

IV. VISUAL ENVIRONMENT OF THE PROJECT

A. Project Setting

The regional landscape establishes the general visual environment of the project, but the specific visual environment upon which this assessment will focus is determined by defining landscape units and the project viewshed.

The regional landscape of central San Diego County is characterized by expansive mesas, broad open canyons, and rolling hills. With the exception of the Miramar Naval Air Station in the southern portion of the project, the land has been subject to suburban development over the past 25 years. Despite the trend towards urbanization in the I-15 corridor, the natural character of the landscape has been partially preserved due to the presence of open space tracts that remain within the freeway viewshed. Usually, this open space occurs in areas where the natural topography is not amenable to development such as mountain and canyon slopes. The vividness of these landforms is amplified by their contrast to the urbanized surroundings. Black Mountain and Penasquitos Canyon are two examples of these open space features.

Lake Hodges is perhaps the most significant natural feature within the project. It is not only a unique feature in an arid landscape, it is also part of the San Dieguito Regional Park open space system which serves as a natural buffer between the cities of Escondido and Poway. The freeway spans a portion of the

lake, and the seasonal ebb and flow of the shoreline serves as a changing source of interest to the frequent highway traveler.

In addition to natural open space, there are distinctive man made landscape features within the developed areas along the corridor. The mature Eucalyptus groves of Scripps Ranch are landmark features that provide a visual reference point to the region's past. There are two large parks and three golf courses that are viewed from the road and contribute to the parkway character of the freeway corridor in the Carmel Highlands and Rancho Bernardo landscape units. Another visual resource in the freeway corridor is the freeway landscaping that helps to mitigate the change in visual character between the facility and the surrounding landscaped suburban development.

The presence of development is mitigated to a large extent by the suburban nature of adjacent land uses. Considering the large population served by the I-15 corridor, there is a surprisingly small amount of commercial strip development and associated signage that is characteristic of other freeways in the region. Most commercial areas and business parks along the corridor such as those at Carroll Canyon Road, Rancho Bernardo Road, and Via Rancho Parkway are heavily landscaped, sited away from the edge of the freeway, and minimally signed.

B. Landscape Units

A landscape unit is a portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers **(Figure 3)**.

Miramar Mesa Landscape Unit
From the beginning of the project to Mira Mesa Boulevard

At the southern end of the project, the freeway bisects the undeveloped portion of Miramar Naval Air Station, where there are expansive views to the east over coastal sage scrub vegetation. As the freeway approaches Scripps Ranch, the topography begins to vary and mature stands of Eucalyptus planted by the Scripps family at the turn of the twentieth century become a primary landscape feature. The northern end of this landscape unit provides views of the Mira Mesa community to the west from an elevated freeway section.

Penasquitos Canyon Landscape Unit
From Mira Mesa Boulevard to Ted Williams Parkway

North of Mira Mesa Boulevard, the freeway cuts through a rocky ridge that forms the transition to Penasquitos Canyon. The northbound traveler then begins to descend through surrounding hills to the rugged topography associated with the canyon. The freeway reaches a low point in its vertical profile as it spans the canyon, then begins its ascent to Carmel Highlands.

Carmel Highlands Landscape Unit
From Ted Williams Parkway to Camino Del Norte

This landscape unit consists of a large plateau ringed by suburban development on the adjacent hills. The primary landscape features in this area consist of two golf courses located on either side of the freeway. Views of the Doubletree golf resort on the westerly edge of the freeway combine with its prominent hillside location to lend a rural ranch character to the visual environment of the freeway. Beginning in this

landscape unit, the existing freeway section includes a non paved median. Freeway landscaping consists of trees with groundcover appearing only at intersections.

Rancho Bernardo Landscape Unit
From Camino Del Norte to Green Valley Bridge

In this landscape unit, the freeway is elevated above the rolling landscape to reveal a planned residential development interspersed with golf courses and parks. Long range views of Palomar Mountain and its foothills are a visual resource for the northbound freeway traveler. Retail centers and corporate parks are located near the freeway. Mature trees and ornamental landscaping is predominant in each type of land use in Rancho Bernardo and contributes to the overall park like character of the community.

San Dieguito Valley Landscape Unit
From Green Valley Bridge to Del Lago Boulevard

The ordered development and intense ornamental landscape planting of Rancho Bernardo gives way to open space and native vegetation as the traveler moves north towards Lake Hodges. The lake is the primary visual element in this landscape unit. Long views east across the lake to the open landscape of the San Dieguito Valley provide a contrast to the developed communities to the south. The commercial areas adjacent to the freeway at Via Rancho Parkway form a core of intense development in a viewshed characterized by open space and native vegetation.

Escondido Hills Landscape Unit
From Del Lago Boulevard to 9th Avenue

As the freeway climbs north into the hills of Escondido, visual character becomes decidedly more rural as development density decreases. Single family residences are sparsely scattered among large parcels of undeveloped land. The freeway landscape itself reflects this semi rural character due to the oleander planting in the median. Median landscaping has become a visual resource that reduces the scale of the freeway and provides visual consistency between the freeway and its surroundings.

Escondido Valley Landscape Unit
From 9th Avenue to the end of the project

The extreme northern portion of the project near the SR-78 interchange traverses the industrial and commercial center of Escondido. This area is a broad valley and the major visual component is industrial and commercial development.

C. Project Viewshed

A viewshed is a subset of a landscape unit and is comprised of all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes brought about by project features.

The viewshed for this project is the landscape that is visible from the I-15 freeway within the project limits.

V. EXISTING VISUAL RESOURCES AND VIEWER RESPONSE

A. FHWA Method of Visual Resource Analysis

Identify Visual Character – Visual character is descriptive and non-evaluative which means it is based on defined attributes that are neither good nor bad in themselves. A change in visual character can not be described as having good or bad attributes until it is compared with the viewer response to that change. If there is public preference for the established visual character of a regional landscape and a resistance to a project that would contrast that character, then changes in the visual character can be evaluated.

Assess Visual Quality – Visual quality is evaluated by identifying the vividness, intactness and unity present in the viewshed. The FHWA states that this method should correlate with public judgments of visual quality well enough to predict those judgments. This approach is particularly useful in highway planning because it does not presume that a highway project is necessarily an eyesore. This approach to evaluating visual quality can also help identify specific methods for mitigating specific adverse impacts that may occur as a result of a project. The three criteria for evaluating visual quality can be defined as follows:

Vividness is the visual power or memorability of landscape components as they combine in distinctive visual patterns.

Intactness is the visual integrity of the natural and built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.

Unity is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape.

B. Existing Visual Resources

1. Existing Visual Character

Miramar Mesa Landscape Unit

The Miramar portion of the unit is predominantly composed of natural landform patterns outside the freeway right-of-way. Distant views across miles of naturally vegetated mesa land give the southern portion of the unit a distinctive character. Large stands of mature eucalyptus trees in Scripps Ranch preserve the historic character of the area. A heavily wooded landscape is unusual in southern California, and is a visual remnant from the days when large rural ranches predominated in San Diego County. The Mira Mesa portion of the unit is composed of a variety of built forms and landscape features that displace the natural landform patterns found elsewhere in the unit. Within the freeway right-of-way, the roadway section is expansive due to the additional HOV lanes found in the median.

Penasquitos Canyon Landscape Unit

This landscape unit is characterized by steep natural topography with freeway views to prominent natural landforms such as Black Mountain. The built form of the freeway bridges the canyon slopes and is compatible with the grand scale of the surrounding natural forms. Recent development on the ridges of nearby hills has changed the natural character of the landscape as viewed from the freeway.

Carmel Highlands Landscape Unit

The suburban scale built forms that characterize this landscape unit are given continuity by the extensive landscaping that is found throughout the viewshed. The natural forms evident in the golf courses, parks and streetscapes are emphasized by the absence of encroaching visual elements such as overhead utilities or obtrusive signage. Freeway landscaping also provides visual continuity between the facility and its surroundings.

Rancho Bernardo Landscape Unit

The land cover components of this landscape unit are similar to the previous one, but the underlying landforms are more pronounced in scale. Expansive foothill and mountain views from northbound lanes of the freeway add to the continuity of the viewshed and emphasize the natural landforms present.

San Dieguito Valley Landscape Unit

The diverse nature of the pattern elements in this unit results from the inclusion of manmade development in the midst of the strong natural forms of Lake Hodges and the San Dieguito Valley. The pattern character of the water surface and broad valley have a high degree of continuity, while the surrounding hills and edges of the valley contain manmade components. Freeway landscaping screens views of commercial development east of the freeway and preserves the visual continuity of the natural forms of the lake and surrounding hills. The low profile of the existing freeway over the lake maintains the flow of the horizontal pattern elements and minimally detracts from the continuity of the whole.

Escondido Hills Landscape Unit

The rural character of the unit is a result of the dominance of natural forms and textures in the community and the freeway environment. Low density residential development has preserved the rolling natural landforms that characterize this hilly area. Vegetation is the primary visual feature and includes mature stands of ornamental trees, orchards, vineyards, and grassy open space lots. Freeway landscaping and median oleander planting are natural features that provide visual continuity between the freeway and the surrounding landscape.

Escondido Valley Landscape Unit

A high level of diversity exists in this unit due to the extensive commercial development and associated signage located in the valley. The flat landform pattern is dominated by the line patterns and textures formed by manmade features. The elevated freeway forms a strong line of bisection through the local development patterns.

2. Existing Visual Quality

Miramar Mesa Landscape Unit

The visual quality of this landscape unit varies from moderately high in the southern portion to moderately low in the northern portion. The higher quality of the southern portion is due to the large tracts of open space with distant views of the foothills and mountains to the east. These features possess a high level of intactness and a moderate level of unity. The distinctive Eucalyptus groves of Scripps Ranch contribute to the vividness of the viewshed. The freeway and community landscaping at Carroll Canyon Road increases the unity of the area by incorporating large Eucalyptus trees into the landscape. As the viewer moves north to Mira Mesa, commercial development at the interchanges lowers the unity and intactness of the landscape. The large cut slopes north of Mira Mesa Boulevard created by the freeway are another feature that lowers the visual quality of the unit.

Penasquitos Canyon Landscape Unit

This area has a moderate level of visual quality. The natural features of the viewshed are vivid, but the presence of the freeway lowers the unity and intactness of the viewshed to lower levels. In addition, development near the interchanges and on the tops of surrounding ridges detract from the natural features of the unit.

Carmel Highlands Landscape Unit

The visual quality of this unit is considered moderate to moderately high. The abundance of landscaping, recreational open space, and unobtrusive built forms contribute to a high degree of unity and intactness throughout the viewshed. The freeway noise berms and landscaping integrate the facility into the community while acting as natural buffers between the freeway and nearby residences. Vividness is moderately low due to the lack of memorable landscape features.

Rancho Bernardo Landscape Unit

This landscape unit possesses moderately high visual quality. Like the Carmel Highlands landscape unit, ornamental landscaping is the dominant, unifying feature in the landscape. In addition, the architecture of Rancho Bernardo has been designed with a unifying theme and scale that lends an additional degree of unity and intactness to the community. The absence of obtrusive signage also contributes to a pleasant visual experience. Vividness is moderately high due to distant views of Palomar Mountain and its rocky foothills from the northbound lanes of the freeway. The split vertical alignment of the freeway provides enhanced distant views from the southbound lanes and reduces the scale of the freeway for the traveler by concealing views of oncoming traffic.

San Dieguito Valley Landscape Unit

There is a moderate level of visual quality in this landscape unit. Lake Hodges is a vivid landscape feature, but encroaching development at the edges of the San Dieguito Valley lowers the unity and intactness of this otherwise scenic area. Freeway landscaping screens views of commercial development east of the freeway and preserves the visual continuity of the natural forms of the lake and surrounding hills. The recreational facilities associated with the lake are buffered from the freeway by this landscaping.

Escondido Hills Landscape Unit

Existing visual quality in this landscape unit is moderately high. Memorable views of foothill estate residences from northbound lanes and the San Dieguito Valley from southbound lanes are visible in the southern portion of the unit. The majority of the unit consists of low density residential development that exhibits a moderately high degree of intactness and unity. Freeway facility features such as landscaped sound berms and median oleanders contribute to the visual unity of the viewshed.

Escondido Valley Landscape Unit

The Escondido Valley's existing visual quality is moderately low due to the low levels of vividness and unity and moderate intactness. The random pattern of commercial development and signage adjacent to the freeway and the flat topography of the valley detract from the broad vistas that extend to the distant hills.

C. Methods of Predicting Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a highway project.

Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. Even when the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals. Analysts can learn about these special resources and community aspirations for visual quality through citizen participation procedures, as well as from local publications and planning documents.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, the duration of their view, the speed at which the viewer moves, and the position of the viewer. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project.

D. Existing Viewer Sensitivity

The communities located along the freeway within the City of San Diego have developed community plans that contain goals and design guidelines that indicate the residents' values and expectations for their visual environment. The following are some guidelines that illustrate which visual features are important to local viewers.

The forested and hilly character of the Scripps Ranch community should be preserved and enhanced.

Eucalyptus trees should be incorporated in roadway landscaping.

Where different land uses occur adjacent to one another, a transitional landscaped buffer should be provided.

Large unbroken expanses of wall should be avoided.

Streets should not be continuously walled off from vistas by buildings or other structures.

Sound walls should be architecturally compatible with the surroundings, located a minimum of 10 feet from the curb, and set back beyond the greenway if possible. Landscaping and other features should be incorporated to visually break up its linear appearance.

Projects visible to persons entering Miramar Ranch North from I-15 require special care in presenting a coherent design statement.

Views from public rights of way should be preserved wherever possible.

Vistas should be enhanced or retained along roadways.

Views from the freeway to the community should be enhanced (particularly at Poway Road interchange) as a visual window to the community.

Building elevations seen from the freeway should be visually interesting.

All parking and storage areas should be screened from the freeway.

Landscaping should be grouped to frame views and create view windows from I-15 and major roads.

The common design themes that emerge from the community plans emphasize the importance of landscaping as a dominant visual element. For most communities, ornamental landscaping is cited as a central element in establishing community character. Carmel Mountain Ranch, for example, establishes its community character on various types of landscaped open space (natural creekbeds, community parks, golf courses, roadway greenbelts, buffers between different land uses, etc.). Design themes are expressed primarily through plant material such as street trees and open space buffer trees.

Views from community roads also play an important role in the plans. It appears that communities recognize that the perception of each community is formed to a large degree by what people observe through their windshields. Thus, there are a number of design guidelines relating to roadway vistas.

Natural features of particular importance to local viewers are Black Mountain, Penasquitos Canyon, Chicarita Creek, and Lake Hodges. Natural slope topography is also considered to be a visual resource.

The City of Escondido has identified I-15 from Lake Hodges to 9th Avenue as a scenic highway. Properties located within 533m (1,750') of the freeway are part of the I-15 Scenic Corridor Special Planning Area. The City's General Plan contains policies regarding viewshed protection for the corridor that require that views from the freeway be preserved and that regulate development within the corridor according to community design policies. These policies address issues such as the siting of buildings outside the freeway viewshed, protecting the natural topography of hillsides and ridgelines, and regulating the height, scale, and landscaping of developments to conform with their surroundings.

The land within the scenic corridor is zoned as Estate and Suburban Residential and many parcels are identified as agricultural land. The freeway forms the border for the Felicita neighborhood on the west and the Kit Carson neighborhood to the east. The Felicita neighborhood is characterized as semi-

rural. The Kit Carson neighborhood contains a variety of land uses, but it primarily consists of estate residential and open space uses.

E. Existing Viewer Groups, Viewer Exposure, and Viewer Awareness

Freeway Travelers

There are approximately 250,000 freeway travelers per day on this portion of I-15. Many drivers commute from North County to San Diego every day. During periods of free flow travel, the project can be traversed in 18 minutes.

Daily commuters may have an increased awareness of views from the road due to the amount of time spent on the facility each day. Those that experience congested traffic conditions will tend to focus views to the freeway itself. Drivers traveling at normal freeway speeds usually focus attention on long range non-peripheral views. Passengers have a heightened awareness of a wide range of views.

Community Residents

Hundreds of residents live near the freeway. Some have midground views of the freeway of long duration. Most views of the freeway are screened by landscaping and/or berms. Residents are likely to have a high concern about the project and its effect on views from their homes and neighborhoods.

Based on the community plans referred to above, community residents are also concerned with the quality of views from the freeway into their communities, particularly at points of entry. These views are experienced by thousands of residents per day for a short duration.

Recreational Area Users

The freeway is adjacent to two natural preserves, two community parks, and three golf courses. Hikers, bicyclists, and equestrians would have foreground to midground views of the freeway for periods of less than an hour. Park users would have midground views of the freeway for longer periods of time. Golfers would have midground views of the facility for up to two hours.

Golfers and park users may be concerned about the appearance of the project. San Dieguito regional park users would have an acute awareness of the proposed project features.

Commercial Area Employees and Customers

A variety of commercial uses ranging from shopping centers to hotels are located near the freeway. Potentially, there are hundreds of viewers per day with short duration midground to distant views of the facility.

Commercial employees and patrons will likely have a moderate to low awareness of the project.

Business Park Employees and Customers

Office buildings located near Carroll Canyon Road, Mira Mesa Boulevard, Carmel Mountain Road, Rancho Bernardo Road, and 9th Avenue Escondido have direct, foreground to midground views of the freeway. Employees working in these buildings would have moderate duration views of the facility.

Office workers would likely have a low awareness of the freeway.

Local Street Users

Thousands of drivers, bicyclists, and pedestrians using local streets each day have short duration views of the freeway facility at interchanges and bridges. There are a few frontage streets such as Erma Road in Mira Mesa and West Bernardo Drive in Rancho Bernardo that have direct views to the freeway. Local street users would have a high awareness of the project.

Bike Path Users

Bicyclists using the regional bikepath that is adjacent to the freeway between Mira Mesa Boulevard and Poway Road have short duration foreground views of freeway traffic.

Bicyclists would have a moderate degree of concern about the effect of the freeway on their riding experience.

VI. VISUAL IMPACT ASSESSMENT

A. Method of Assessing Project Impacts

The visual impacts of project alternatives are determined by assessing the visual resource change due to the project and predicting viewer response to that change.

Visual resource change is the sum of the change in visual character and change in visual quality. The first step in determining visual resource change is to assess the compatibility of the proposed project with the visual character of the existing landscape. The second step is to compare the visual quality of the existing resources with projected visual quality after the project is constructed.

The viewer response to project changes is the sum of viewer exposure and viewer sensitivity to the project as determined in the preceding section.

The resulting level of visual impact is determined by combining the severity of resource change with the degree to which people are likely to oppose the change.

B. Definition of Visual Impact Levels

Low - Minor adverse change to the existing visual resource, with low viewer response to change in the visual environment. May or may not require mitigation.

Moderate - Moderate adverse change to the visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices.

Moderately High - Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than five years to mitigate.

High - A high level of adverse change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. Viewer response level

is high. An alternative project design may be required to avoid highly adverse impacts.

C. Analysis of Key Views

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key viewpoints that would most clearly display the visual effects of the project. Key views also represent the primary viewer groups that would potentially be affected by the project.

Many visual features (such as architectural treatment and landscaping) normally proposed as mitigation are being integrated into the project design to avoid adverse visual impacts. These impact avoidance features are depicted in the photo simulations.

Key view locations are shown in **Figure 4.**

Key view #1 (Figure 5)

Orientation
This key view looks south from the parking lot of the apartment complex located adjacent to the southbound exit ramp at the Carroll Canyon Road interchange.

Existing Visual Quality/Character
This view is representative of those seen from the apartment patios and common areas in three residential complexes bordering the freeway near Carroll Canyon Road. Most views are interior, but opportunities for distant views exist, and the visual context of the Scripps Ranch eucalyptus groves nearby is readily apparent. This is evidenced by the welcome shade that the trees cast on the parking lot. Visual quality for this key view location is moderate. The visual unity and intactness is moderate due to the mature vegetation that brings the site context into the foreground. The vividness of the viewshed is low due to the vernacular architecture and the lack of memorable distant views.

Although these residential complexes are located near a major freeway, the mature eucalyptus groves give a rural feel to the location. Landscaping is a primary visual feature in the viewshed. The low density small scale development of this area is suburban in character.

Proposed Project Features
The project proposes to construct three noise walls along the easterly portions of residential complexes near the Carroll Canyon interchange. The walls would be twelve to sixteen feet in height, and would be constructed of masonry block. In the case of this key view, the existing eucalyptus trees located in Caltrans right-of-way would also be removed as a result of freeway widening. The widening would leave insufficient space to replace the trees.

Change to Visual Quality/Character
The proposed wall would block views from the apartment complex to the east and focus views on the parking lot itself. The wall would create an undesirable sense of enclosure and replace the variable spatial edge of the space with a monolithic single plane. A wall of this size would likely create undesirable light and air access effects. The wall would reduce the visual quality of the view to a moderately low level.

Construction of the proposed wall would change the visual character of the complex from suburban to urban. A 16’ wall is an urban form that is out of place in a small scale suburban environment where the primary visual feature is landscaping. The urbanizing effect of this wall combined with additional new

freeway features proposed for the interchange would be viewed as a negative change to the community.

Viewer Response
The parking lot shown in the key view serves approximately 100 residential units. The duration of views would be long since the project would be seen from the interiors of the apartments. The wall would also be visible from I-15, and would be a prominent foreground feature for drivers using the southbound exit ramp to Carroll Canyon Road.

The proposed wall would be inconsistent with the design goals of the community. The City of San Diego building code prohibits construction of free standing solid walls of over 3m (10 feet) in height adjacent to multi family residential parking lots such as this. Although the Caltrans is not obliged to comply with local codes, community sensitivity to the proposed change is likely to be moderate to high. Overall viewer response would be moderately high.

Resulting Visual Impact
The change in visual quality would be from moderate to moderately low. The change in visual character would be from suburban to urban. Viewer sensitivity to visual change in this area is expected to be moderately high. The resulting visual impact would be moderately high.

Key view #2 (Figure 6)

Orientation
This key view is in a low-lying area located west of the freeway. The roadway is located at the top of the slope. The street in the foreground is a frontage road that serves a residential area composed of three story apartment buildings.

Existing Visual Quality/Character
Residents of the apartment complex look east to a tall slope vegetated with native and naturalized trees shrubs and ground cover. The streetscape has the appearance of a modified riparian area because the vegetation of the slope dominates the view and gives the impression that the street is at the bottom of a natural canyon. The ornamental landscaping of the apartments further emphasizes planting as a visual feature in the viewshed. Visual unity is moderate because the scale of the slope is compatible with the scale of the architecture. Intactness is high due to the lack of intrusive elements such as power lines and signage. Vividness is low due to a lack of memorable views. Overall visual quality is moderate.

The visual character of the viewshed is suburban. The scale of the apartment buildings give the area a more urban feel than that of the previous key view, but the large vegetated slope across Maya Linda Road and the landscaping adjacent to the buildings provide a strong landscape context to the scene.

Proposed Project Features
Proposed freeway widening would require a retaining wall that would vary from 3m to 10m in height. The wall would be approximately 10m tall in the area of the key view location. Very little, if any, of the existing slope and its vegetation would be preserved. It has not yet been determined what type of wall would be constructed. At the top of the retaining wall, a noise wall 2.4m in height is proposed.

Change to Visual Quality/Character
The proposed walls would decrease the intactness and unity of the viewshed. The proposed retaining wall would become an intrusive visual element by dominating the visual environment of the street. By replacing the natural forms of the existing vegetated slope with a monolithic built form, the project reduces the visual unity of the architecturally articulated and landscaped residential complex. Adverse change to the visual

quality of the viewshed would be high.

The visual character of the viewshed would change from suburban to urban. The large scale of the proposed wall is consistent with the scale of urban core areas rather than suburban communities and would contrast with the existing residential development. The existing slope which acts as a natural buffer between residents and the freeway would be removed and replaced by a large freeway feature. In effect, the freeway would be the dominant visual feature in the neighborhood. The level of change to the visual character of the viewshed would be high. It is anticipated that the change in character would be perceived as negative.

Viewer Response
There are several hundred residents that would have midground views of long duration. Views from the residential units effected are oriented within the complex of buildings; however, viewer awareness of the proposed wall would likely be moderately high. Sensitivity to this change may be moderate to high because the proposed wall would conflict with local values and goals as expressed in community design guidelines. Since Maya Linda Drive is a cul de sac, the number of non residents viewing the wall would be low. Overall viewer response to change would be moderately high.

Resulting Visual Impact
Change to visual quality and character would be highly adverse, and viewer response to the change would be moderately high. The resulting adverse visual impact would be moderately high.

Key View #3 (Figure 7)
Erma Road south of Scripps Westview Way

Orientation
This key view is taken from Erma Road and looks north. The road borders I-15 on the west and several multifamily residential developments to the east.

Existing Visual Quality/Character
This heavily landscaped suburban neighborhood is bordered to the west by Erma Road. Beyond Erma Road, the freeway forms a distinct urban contrast. The expansive scale of concrete paving and lack of landscaping contrast with the landscaping and architecture built to a human scale. Views to the freeway beyond reduce the visual unity and intactness to a moderate level. The vividness of the viewshed is low despite distant views to west and northwest.

Proposed Project Features
The freeway would be widened 2.4m and a retaining wall would be placed approximately 4m from the proposed edge of shoulder. The retaining wall would vary from 1m to 3m in height. A noise wall 2.4m in height would be placed on the retaining wall.

Change to Visual Quality/Character
The proposed walls would block undesirable views of the freeway for residents and local street users. Distant views would be preserved. The suburban character of the community would be improved by removing views of the freeway, but adversely impacted by the presence of a large built form that is urban in scale. Some adverse visual effects would be created by the large scale and flat, monolithic form of the wall which would contrast sharply with the scale of the nearby residential architecture. The large wall surface could be subject to graffiti and introduce an undesirable facet of urban life to the neighborhood. The adverse impact to visual quality would be moderate, and there would be a low level of change in visual character.

Viewer Response
There are several hundred residences located on the easterly side of Erma Road. Residents' views of the freeway are now buffered by landscape planting located near their homes. In addition, areas of frequent human use where long duration viewing would occur such as patios and recreational areas are oriented away from the freeway, so viewer sensitivity of residents would likely to be low. As residents use Erma Road to enter and exit the neighborhood on a daily basis, they would experience short duration foreground views of the proposed wall. Sensitivity to this change in the visual environment may be moderate to high because the proposed wall would conflict with local values and goals as expressed in community design guidelines. Overall viewer response to visual change would be moderate.

Resulting Visual Impact
Adverse changes to visual quality would be moderate. Change to visual character would be low. Viewer response to visual change would be moderate. Overall adverse impact would be moderate.

Key View #4 (Figure 8)
I-15 Northbound north of Mira Mesa Boulevard

Orientation
This key view depicts the west facing side of the same wall analyzed in the previous key view.

Existing Visual Quality/Character
The overall visual quality and character in the Miramar Mesa landscape unit from a freeway user's perspective have been described previously in this assessment. After passing through a commercial area adjacent to the Mira Mesa Boulevard interchange, more pleasing views of residential development with its mature ornamental landscaping are complemented by more distant views of natural hillsides. The interplay of small scale development, mature landscaping, and natural features results in moderate levels of visual intactness, unity, and vividness.

The small scale development that is buffered by landscaping and natural open space is typically suburban. Open views from the freeway enable the traveler to experience the surrounding landscape and provide relief from the visual monotony of freeway travel.

Proposed Project Features
The project proposes to widen the freeway one lane in the northbound direction. A 2.4m noise wall is also proposed, and would be located at the top of a 1:2 slope 1.2m in height. The total height of the noise barrier would be 3.6m.

Change to Visual Quality/Character
This key view depicts the effects of the proposed sound wall on views from the northbound lanes of the freeway. The wall would become a prominent visual feature, block desirable views from the road, and change the existing visual character of the freeway. The close proximity of the wall to freeway viewers would create a sense of enclosure and emphasize close proximity views of freeway traffic. This sense of proximity would be mitigated somewhat by the slope located between the edge of shoulder and the wall. Desirable views of mature landscaping outside the right-of-way would be obstructed. The wall would result in a loss of visual intactness because its long, unbroken vertical surface would appear as singular unharmonious form in the landscape. Visual unity would also be reduced because the wall would sever the spatial relationship between the freeway and the surrounding landforms. The adverse change in visual quality would be moderately high.

The introduction of a sound wall to the edge of the freeway would adversely change the visual character

in this portion of the viewshed. A built form that is normally associated with an urban core area would interrupt the experience of driving through a suburban landscape. Its presence would block mid range views to surrounding landscaped areas, emphasize views of traffic, and diminish the positive qualities of remaining distant views. This change in visual character is likely to be perceived to be adverse by the community.

Viewer Response
Approximately 250,000 people would view this wall each day. The views would be of short duration. Sensitivity to this change in the visual environment is likely to be moderate to high because the proposed wall would conflict with local values and goals as expressed in community design guidelines. Overall viewer response is expected to be high.

Resulting Visual Impact
The adverse change to visual quality would be moderately high. The community would likely consider the change to visual character adverse. The viewer response would be high. The overall adverse impact would be moderately high.

Key View #4A
At the shoulder of the I-15 freeway between Mercy Road and Penasquitos Canyon Bridge looking south.

Orientation
This key view depicts proposed freeway widening and noise barrier 4-1B.

Existing Visual Quality/Character
The overall visual quality and character in the Penasquitos Canyon landscape unit from a freeway user's perspective have been described previously in this assessment. After the freeway traveler descends to the Poway Road interchange between large naturally vegetated cut slopes, distant views of natural hillsides appear as the freeway begins to ascend and traverse Penasquitos Creek. The open views of naturally vegetated topography result in moderately high levels of visual intactness, unity, and vividness.

The small extent of isolated development buffered by landscaping and natural open space is typically suburban and almost semi rural. Open views from the freeway enable the traveler to experience the expanse of surrounding landscape and provide relief from the visual monotony of freeway travel.

Proposed Project Features
The project proposes to widen the freeway two lanes in the southbound direction. A 4.3m noise barrier is also proposed, and would incorporate a concrete safety barrier at its base.

Change to Visual Quality/Character
This key view depicts the effects of the proposed sound wall on views from the southbound lanes of the freeway. The wall would become a prominent visual feature, block desirable views from the road, and change the existing visual character of the freeway. The close proximity of the wall to freeway viewers would create a sense of enclosure and emphasize close proximity views of freeway traffic. The wall would result in a loss of visual intactness because its long, unbroken vertical surface would appear as singular unharmonious form in the landscape. Visual unity would also be reduced because the wall would sever the spatial relationship between the freeway and the surrounding landforms. The adverse change in visual quality would be moderately high.

The introduction of a sound wall to the edge of the freeway would adversely change the visual character in this portion of the viewshed. A built form that is normally associated with an urban core area would interrupt the experience of driving through a suburban landscape. Its presence would block expansive long range open space views, emphasize views of traffic, and diminish the positive qualities of remaining distant views. This change in visual character is likely to be perceived to be adverse by the community.

Viewer Response
Approximately 250,000 people would view this wall each day. The views would be of short duration. Sensitivity to this change in the visual environment is likely to be moderate to high because the proposed wall would conflict with local values and goals as expressed in community design guidelines. Overall viewer response is expected to be high.

Resulting Visual Impact
The adverse change to visual quality would be moderately high. The community would likely consider the change to visual character adverse. The viewer response would be high. The overall adverse impact would be moderately high.

Key View #5 (Figure 9)
Adjacent to the southbound lanes between Ted Williams Parkway and Carmel Mountain Road overcrossing.

Orientation
This key view is located within a multi family residential community on the westerly edge of I-15 south of the Carmel Mountain Road interchange. The existing photo is a view from the rear of a residential building looking towards an existing landscaped berm in Caltrans right-of-way.

Existing Visual Quality/Character
The predominant visual feature in this key view is landscaping. The Caltrans right-of-way fence is an encroaching manufactured element in the viewshed. The visual unity and intactness of the scene is moderate and the vividness is low. Overall visual quality is moderate.

The character of the view is determined by natural textures, forms, and colors of the landscaping and by the manufactured nature of the sound berm and its sense of enclosure. The resulting visual character would be described as suburban due to the presence of natural and small scale manufactured elements in the landscape.

Proposed Project Features
The proposed project would widen the freeway 3.6m nearer to the residences, and relocate the existing earthen berm to a corresponding position. In order to place the berm within the existing Caltrans right-of-way, a retaining wall 1.8m–2.4m in height will be need to be located along the existing right-of-way line. The existing fence would be removed and would not be replaced because the wall would serve as an access control structure. Existing planting on the berm would be replaced at the time of construction.

Change to Visual Quality/Character
The introduction of the proposed retaining wall as a new manufactured visual element would contrast with natural features and lower the unity and intactness of the viewshed. The adverse impact would be low.

The relocated berm and the proposed retaining wall would preserve the essential character of the existing

view. A 1.8m high wall is an architectural feature that is compatible in a suburban setting. The change to visual character would be low.

Viewer Response
Approximately 15 residential dwelling units would have long duration views of the proposed project features. Sensitivity to visual change would be high for that viewer group. Because of the small number of viewers affected, the overall viewer response to change would be low.

Resulting Visual Impact
Adverse change in visual quality and character would be low. Viewer response would be low. Overall adverse impacts would be low.

Key View #6 (Figure 10)
I-15 southbound near Duenda Drive overcrossing in Rancho Bernardo

Orientation
This key view is looking south toward the Duenda Drive overcrossing and includes views of the sloped median on the left and noise berm to the right.

Existing Visual Quality/Character
The intactness and unity of this view are moderately high due to the complementary relationship between the freeway and the surrounding suburban neighborhood. The split alignment of the freeway reduces the scale of the facility by half by obscuring views of oncoming traffic and allows for a natural surface to appear in the midst of an urban design element. The noise berm and freeway landscaping on each side of the pavement also contribute to the unity and intactness of the view. The vividness of the view is low. The visual quality of the view is considered moderate.

Natural forms and small scale built forms establish the visual character of the view which can be described as suburban. A suburban visual character is typical of this portion of the corridor.

Proposed Project Features
Freeway widening would occur in the median and beyond the outside shoulder. A retaining wall will be placed in the median and the existing berm will be relocated. Existing landscaping will be removed due to landform alteration.

Change to Visual Quality/Character
Intactness and unity levels would decrease moderately due to increased pavement, loss of the vegetated median slope, and loss of existing mature freeway landscaping.

Natural forms would be replaced with built forms and the increased scale of the freeway would change the character of the viewshed to one that would be more urban.

Viewer Response
Since this type of change to the visual environment of the freeway corridor would occur on a majority of the project, hundreds of thousands of people per day would have a moderate duration exposure to the change. Commuters who use the route daily would have a long duration cumulative exposure. Hundreds of adjacent residents with long duration views would be exposed to the freeway due to the temporary loss of landscape screening. Viewer sensitivity to visual change is expected to be moderate for freeway travelers and high for nearby residents who value the suburban “country club” character of their community.

Resulting Visual Impact
Adverse change to visual quality would be moderate. An urbanizing change to the visual character of the freeway would contrast with the adjacent community and be considered moderately adverse. Viewer sensitivity to change would be moderate to high. The resulting adverse impact would be moderate.

Key View #7 (Figure 11)
I-15 southbound at Centre City Parkway

Orientation
This key view looks south toward the Del Lago Avenue overcrossing.

Existing Visual Quality/Character
The intactness and unity of this view are moderately high due to the complementary relationship between the freeway and the surrounding landscape. The existing median planting reduces the scale of the facility by half by obscuring views of oncoming traffic and appears as a natural element in the midst of an urban landscape feature. The naturally vegetated freeway slopes adjacent to large parcels of open land contribute to the unity and intactness of the view. The vividness of the viewshed is moderately high due to the pleasing view of distant foothills. The visual quality of the view is considered to be moderately high.

Natural forms, large open space areas, pleasing distant views, and small scale built forms establish the semi-rural visual character of the viewshed typical of this landscape unit.

Proposed Project Features
A direct access ramp structure is proposed to replace the Del Lago Avenue overcrossing. The median would be widened and the median planting removed. The main lanes of the freeway would also be widened to the outside, which would require the adjacent slope to be graded and a retaining wall to be constructed.

Change to Visual Quality/Character
Intactness and unity would be decreased to a low level because of the contrast between the large built forms of the freeway and the surrounding semi rural landscape. Vividness would also be decreased to a moderate level because the large scale of the freeway would detract from the distant views.

The massive increase in the scale of built forms proposed for the freeway would dramatically urbanize the visual character of the viewshed.

Viewer Response
Hundreds of thousands of people per day would have a short duration exposure to the proposed changes. Commuters who use the route daily would have a long duration cumulative exposure. Viewer sensitivity to visual change is expected to be moderate for freeway travelers and nearby residents who value the semi-rural character of their community.

Resulting Visual Impact
Adverse change to visual quality would be moderately high. Change to visual character would probably be considered by local viewers to be adverse. Viewer response to visual change in this location would be moderate. The resulting adverse visual impact would be moderately high.

Key View #8 (Figure 12)
I-15 northbound near Citricado Parkway

Orientation
This key view depicts the visual effects of freeway widening and median planting removal on northbound freeway travelers in the Escondido Hills landscape unit.

Existing Visual Quality/Character
Just as in the previous key view, intactness and unity are moderately high due to the complementary relationship between the freeway and the surrounding landscape. The existing median planting in this view also reduces the scale of the facility by half by obscuring views of oncoming traffic and appears as a natural element in the midst of the roadway environment, giving it the feeling of a rural parkway. The landscaped berm located adjacent to large estate parcels contribute to the unity and intactness of the view. The vividness of the viewshed is low, however, due to the lack of memorable visual features in the landscape. The visual quality of the view is considered moderate.

Natural landscape forms and large open space areas establish the semi-rural visual character of the viewshed typical of this landscape unit.

Proposed Project Features
Median planting and the landscaped berm would be removed to widen the freeway. A raised planter between relocated barriers has been proposed for the median, and a landscaped slope would replace the existing landscaped berm.

Change to Visual Quality/Character
Visual quality would moderately decrease because of freeway widening and temporary loss of freeway landscaping. Visual intactness and unity would both decrease as a result of the paved surfaces gaining dominance in the viewshed. The visual character would change from semi-rural to urban. Removing the existing berm would create views to the freeway from adjoining residential properties on the northbound side. Large lot sizes have enabled homes to be located at a distance from the right-of-way, so views of the freeway from homes would be buffered by existing landscaping on those properties.

Viewer Response
The I-15 corridor in this area has been designated by the city of Escondido as a scenic corridor, so viewer sensitivity to visual change is likely to be high for area residents and freeway travelers. Approximately 200,000 freeway travelers would view the changes each day. View duration for freeway travelers in the Escondido Hills landscape unit (where these visual changes would be somewhat typical) would be several minutes. Adjacent residents would number in the hundreds and would have long term exposure to the proposed visual change.

Resulting Visual Impact
Adverse change to visual quality would be moderate, change to visual character by local residents would likely be considered adverse, and viewer response levels are predicted to be high. The resulting adverse impact would be moderate.

D. Summary of Project Impacts

The visual effects of the project can be summarized by saying that the suburban and semi rural character of the I-15 corridor would become noticeably more urban. Generally, this change would adversely affect freeway users more than it would those who view the freeway from adjacent communities.

Views from the freeway would be diminished in quality by the increase in size and scale of the freeway and its walls, structures, and appurtenances. The new built forms would proportionally displace existing natural features because the existing right-of-way footprint would remain the same. The effect of this change would be magnified because the large numbers and sizes of vertical walls that are proposed in the median, at structures, and at the edges of the freeway would be highly visible.

Views to the freeway would also be adversely affected at right-of-way edges and community entrances. The right-of-way boundaries between the freeway and the communities would remain essentially the same. The existing landscaped buffers would, however, be reduced in size, and in some cases be fully or partially replaced with retaining walls and/or noise barriers. The most extreme example of this type of change is the proposed retaining wall/noise wall at Maya Linda Road (Key View #3). At community entry points, freeway interchange landscaping would be reduced and structures would be enlarged. The increased scale of the roadway and structures would adversely affect pedestrian views at freeway crossings. The new interchanges may no longer be consistent with the visual goals of some communities in the corridor.

VII. VISUAL MITIGATION

Caltrans and the FHWA mandate that a qualitative/aesthetic approach should be taken to mitigate for visual quality loss in the project area. This approach fulfills the letter and the spirit of FHWA requirements because it addresses the actual cumulative loss of visual quality that will occur in the project viewshed when the project is implemented. It also constitutes mitigation that can more readily generate public acceptance of the project.

Visual mitigation for adverse project impacts addressed in the key view assessments and summarized in the previous section will consist of adhering to the following design requirements in consultation with the District 11 Landscape Architect. The requirements are arranged by project feature and include design options in order of effectiveness. All visual mitigation will be designed and implemented with the concurrence of the District 11 Landscape Architect.

Implementation of the following mitigation guidelines will reduce impacts of the project to non-significant levels. Many of the mitigation guidelines are being proposed as project features to avoid adverse impacts.

A corridor design concept will be developed by the District 11 Landscape Architect in consultation with community planning groups, City staff members, and the Caltrans Project Development Team. The corridor concept will incorporate the mitigation design guidelines contained in this study.

Noise Barriers

Landscaped noise berms ***(Figure 13) (Figure 13a)***

Noise barriers shall consist of landscaped berms wherever possible. Landscaped berms are the preferred visual mitigation for noise barriers and are most visually compatible with land uses adjacent to the freeway. Berms allow the heights of noise barriers to be reduced as much as 1.2m (4 ft.).

Noise berm/ retaining wall combinations ***(Figure 14)***

In areas where the right-of-way is too narrow to accommodate a berm, a retaining wall may be used to avoid constructing a sound wall on top of the berm. This will also result in a barrier with a lower profile than a noise berm/wall combination due to the berm's superior sound attenuation qualities.

Noise berm/wall combinations ***(Figure 15)***

This barrier configuration is preferable in situations where a tall retaining wall at the toe of slope would create a visual impact to an adjacent property. To be effective, this option should incorporate a berm with a 1:2 slope on the freeway side of that is 1.2m (4 ft.) high (minimum). This size berm should preclude the need of a safety barrier to protect the noise wall and allow enough space to provide screening shrubs in front of the wall.

Noise wall landscape buffers ***(Figure 16)***

In cases where berms are entirely unfeasible, sound walls should incorporate planting on both sides. In some cases, retaining walls may be needed to provide the required planting space on the freeway side of the wall.

Noise wall planting pockets ***(Figure 17)***

Where right-of-way is too narrow to employ the configurations listed above, a safety barrier is required to be placed in front of the wall. A minimum 0.6m (2 ft.) wide planting area should be provided between the back of the barrier and the face of wall. Placing the sound wall on top of the barrier should be avoided if at all possible.

Transparent Noise Walls ***(Figure 18)***

In situations where noise receptors are located above the elevation of the freeway, noise walls located at the top of slope near the right-of-way line or on private property shall be used if feasible and reasonable. Locating walls at higher elevations nearer the receptors substantially reduces the height of walls to achieve "line of sight" noise reductions. In cases such as those depicted in Key View 5, where the walls would block views from residences, transparent panels should be used to preserve those views.

Architectural Detailing

Noise walls will be designed to be visually compatible with the surrounding community. Architectural detailing such as pilasters, wall caps, interesting block patterns, and offset wall layouts will be used to add visual interest and reduce the apparent height of the walls. Enhanced materials will also be used to meet community design goals.

Retaining walls

Retaining wall/Barrier planting pockets ***(Figure 19)***

In areas where retaining walls must be placed close to the traveled way, space should be reserved between the wall and the safety barrier to include a 1.8m (6') wide planting pocket.

Terraced retaining walls ***(Figure 20)***

In situations where site conditions permit, retaining walls over 5m in height should be divided into two separate structures sufficiently offset from one another to create a flat planting area between the two.

Mid slope retaining walls ***(Figure 21)***

Retaining walls should be located at mid slope wherever possible to provide a buffer area for landscape screening between the wall and the freeway.

Terrain contoured retaining walls ***(Figure 22)***

Retaining walls that follow the contours of the topography and maintain a constant elevation at the top of wall shall be used where appropriate. This type of wall shall be visually compatible with surrounding terrain and provide room at the base for a landscape screening buffer.

Plantable retaining walls

Crib walls that utilize a stacking tray design such as Evergreen walls shall be used in place of Caltrans standard design crib walls wherever possible to provide a landscaped surface that will blend in with the surrounding landscape.

Architectural surface treatment

Architectural features, textures and colors shall be used to mitigate the appearance of retaining wall surfaces. Walls shall incorporate architectural features such as pilasters and caps to provide shadow lines, provide relief from monolithic appearance, and reduce their apparent scale.

Overcrossing, Undercrossing, Bridge, and Direct Access Ramp (DAR) Structures

Structure design shall be enhanced with architectural features and be consistent with corridor design themes developed by the District Landscape Architect. Pedestrian lighting, widened sidewalks (1.8m-2.4m in width), bicycle lanes, and other urban amenities on local street portions of structures shall be provided to be consistent with community values and goals. Slope paving at undercrossings shall be enhanced with texture to deter graffiti. See-through bridge rails such as the Type 80 rail shall be used on the Lake Hodges and Green Valley Creek bridges.

Del Lago Boulevard Transit Center

Site amenities for transit users will be provided such as covered bus shelters, pedestrian lighting, benches, litter receptacles, tree grates, bollards, and bicycle racks. Landscaping and enhanced pedestrian paving will be an integral part of the station features. Mtdb will take the lead role in the transit center design.

Loss of existing freeway landscaping

Corridor landscaping

The project shall receive landscaping that is consistent with the appearance of the adjacent community. In areas of the project that are characterized by ornamental landscaping, freeway landscaping that includes trees, shrubs, and groundcover should be installed. In less developed areas of the corridor, landscaping with trees and shrubs will be planted.

Loss of existing median planting

Raised Median Planter

Existing median oleanders that are removed due to the project shall be replaced by new oleanders of a medium sized variety planted in a raised bed of soil between two median barriers spaced a minimum of 2m apart.

Median Wall Planter

Loss of shrubs and herbaceous ground cover in existing medians of split alignment shall be mitigated by creating a shrub planting area between median retaining walls and concrete barriers where the available width is of 2m (6 ft.) or greater.

Median Barriers

In order to preserve desirable views and reduce the visual scale of the freeway facility, concrete median barriers shall be Type 60S and Type 732.

Manufactured slopes

Slopes shall be graded 1:2 or flatter to support planting and irrigation. Grading shall utilize techniques such as slope rounding, slope sculpting, and variable gradients to approximate the appearance of natural topography.

Lighting and Signage

Lighting and signage attachments on structures shall occur at pilasters or be incorporated in other architectural features.

Existing freeway lighting and signage design themes for the corridor shall be continued.

Pedestrian lighting on all overcrossings shall be uniform and conform to the corridor design theme.

Soffit lighting shall be provided on all undercrossings with pedestrian facilities.

Electrical and signal equipment at ramp termini shall be placed in visually unobtrusive locations.

Operational and Maintenance Facilities

Barrier machine facilities visible from the freeway or local streets shall be screened from view with walls and/or vegetation.

Access control fences

Access control fencing shall be placed in visually unobtrusive locations of interchanges and bridges. It shall be coated with black vinyl where appropriate.

Retaining walls and sound walls near right-of-way boundaries shall be placed in such a way that an additional access control fence will not be needed. The “dead” spaces that occur between walls and fences should be avoided if at all possible.

Drainage and Water Quality Facilities

Concrete interceptor ditches shall not be placed at the toe of slopes adjacent to residential property or pedestrian use areas. Alternatives such as subterranean drainage placed below finish grade or a planted geo-reinforced drainage surface shall be used.

Concrete drainage devices located in non-landscaped areas shall be colored to match the surrounding soil.

Soft surface alternatives to concrete ditches and rock slope protection shall be utilized wherever possible.

Detention basins and geo-swales in ornamentally landscaped areas shall be planted with visually compatible ornamental ground cover.

VIII. REFERENCES

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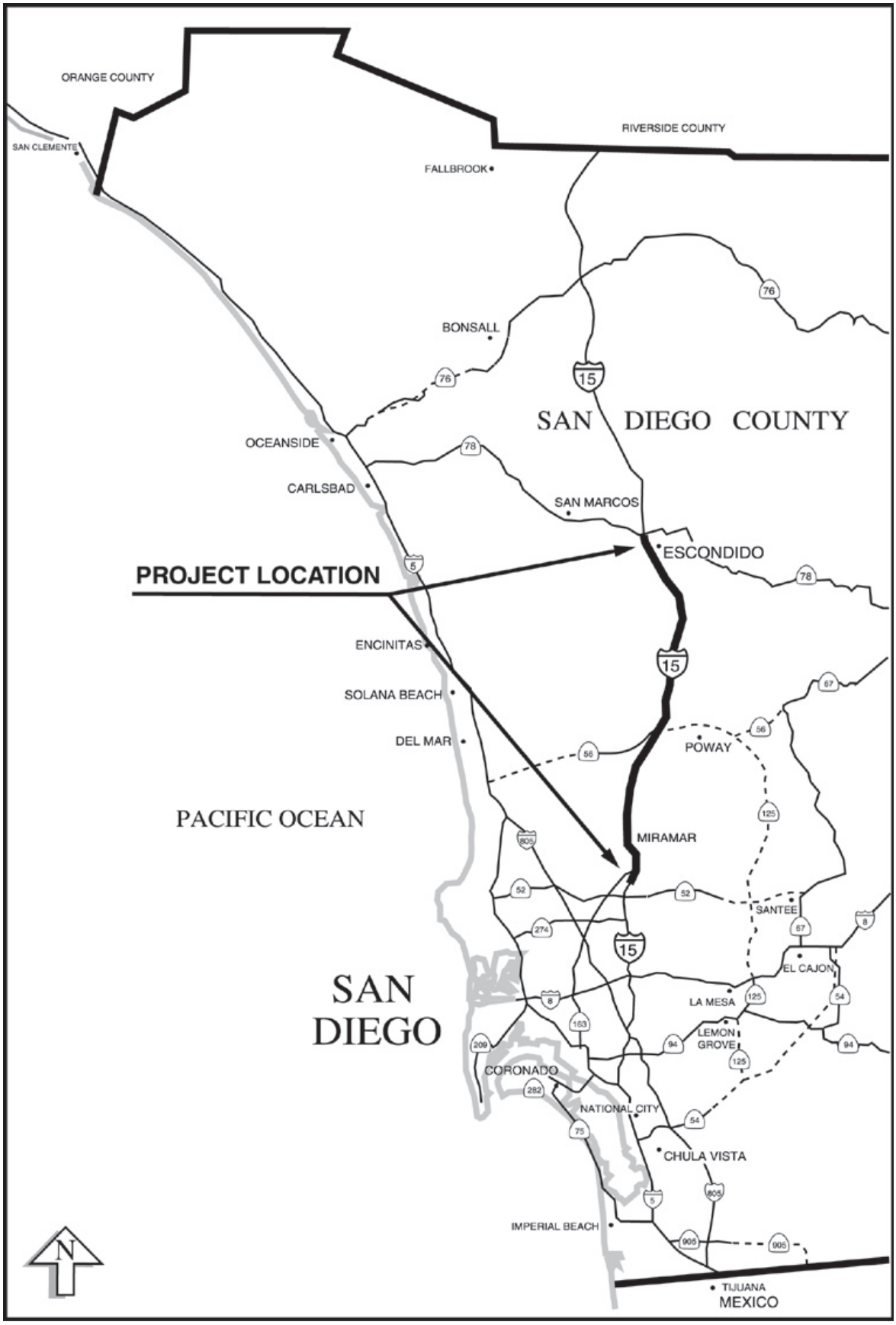


Interstate 15 Managed Lanes

Regional Location Map

Figure 1

Interstate 15 Managed Lanes

Figure 2

Interstate 15 Managed Lanes

Landscape Units

Figure 3

Interstate 15 Managed Lanes

Key View Locations

Figure 4

Existing View

Apartment complex Northwest of the Carrol Canyon Road Interchange

Proposed View (10' wall)

Existing View
Maya Linda Road looking Southeast

Proposed View **(5 years after construction)**

Existing View
Erma Road looking North

Proposed View **(5 years after construction)**

Existing View
STA 275+00 near Erma Road looking North

Proposed View (5 years after construction)

Existing View
Interstate 15 looking South

Proposed View **(5 years after construction)**

Existing View

Multi-family housing open space area Northwest of the I-15/SR-56 Interchange

Proposed View **(5 years after construction)**

Existing View
STA 408+00 looking South towards Duenda Road overcrossing

Proposed View (5 years after construction)

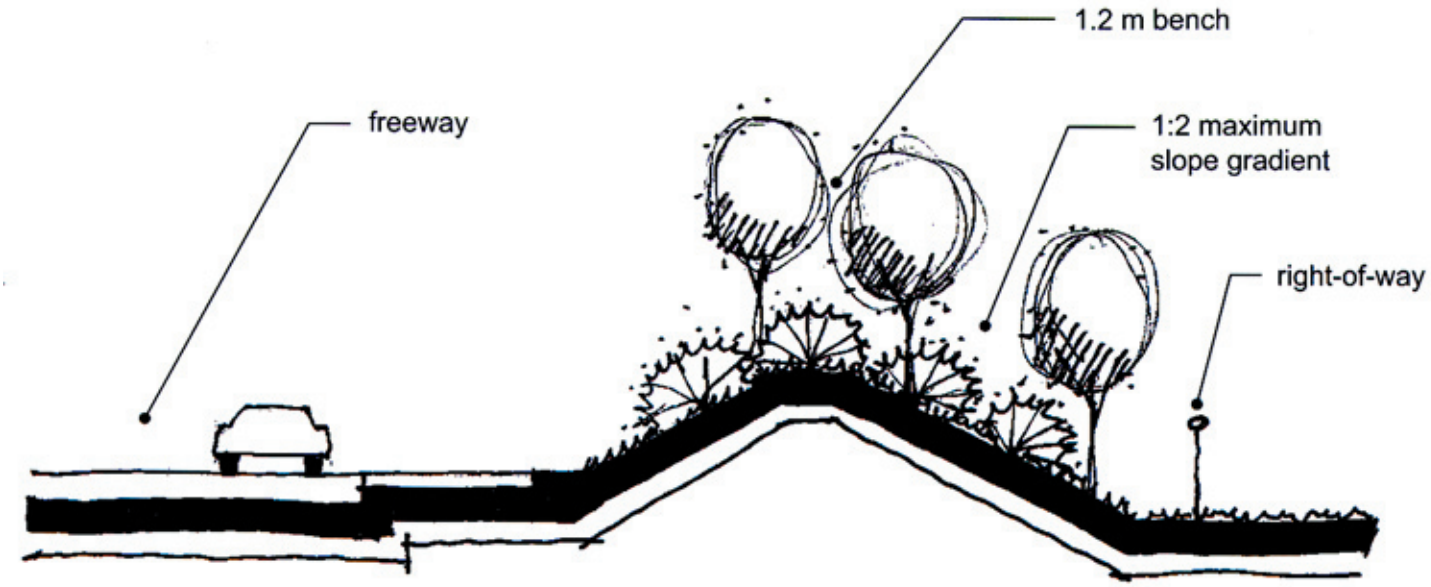
Existing View

STA 453+00 looking South towards Del Lago Boulevard direct access ramp structure

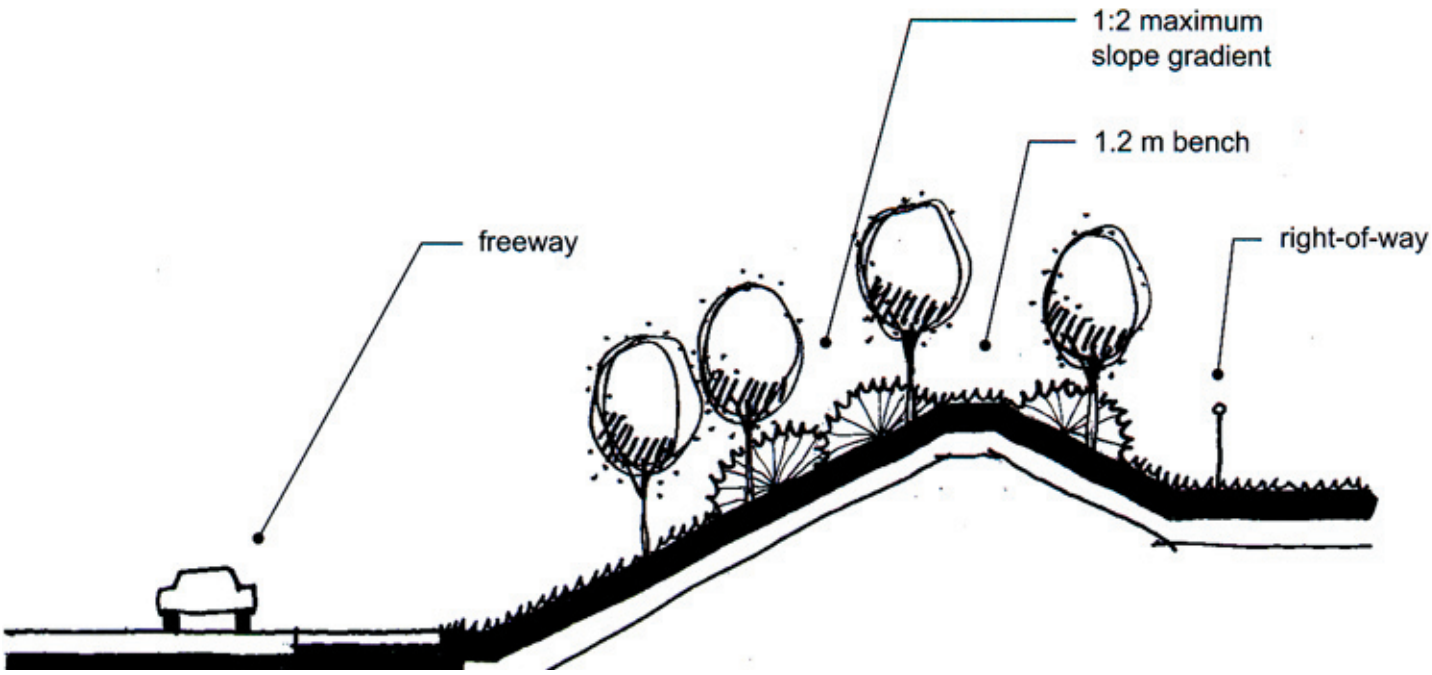
Proposed View **(5 years after construction)**

Existing View
STA 479+00 near Citricado Parkway looking North

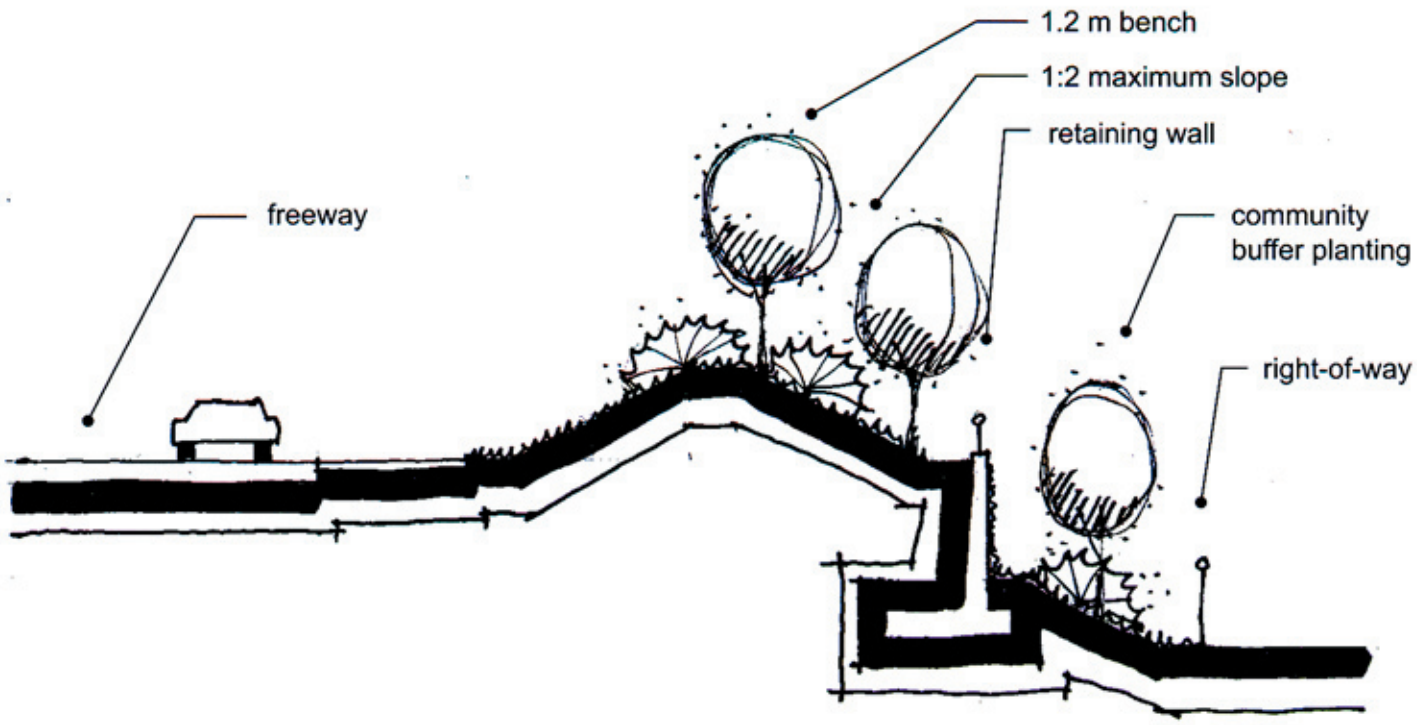
Proposed View **(5 years after construction)**



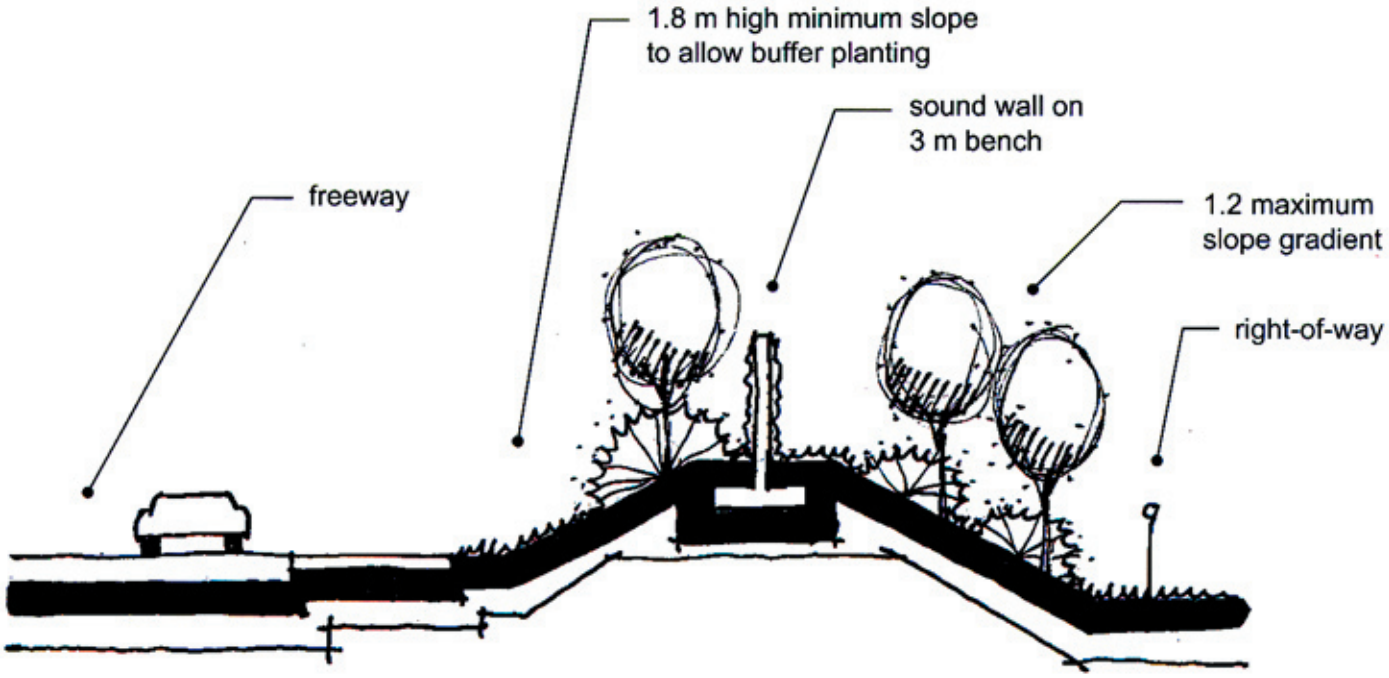
Landscaped Sound Berm - Fill Slope Condition



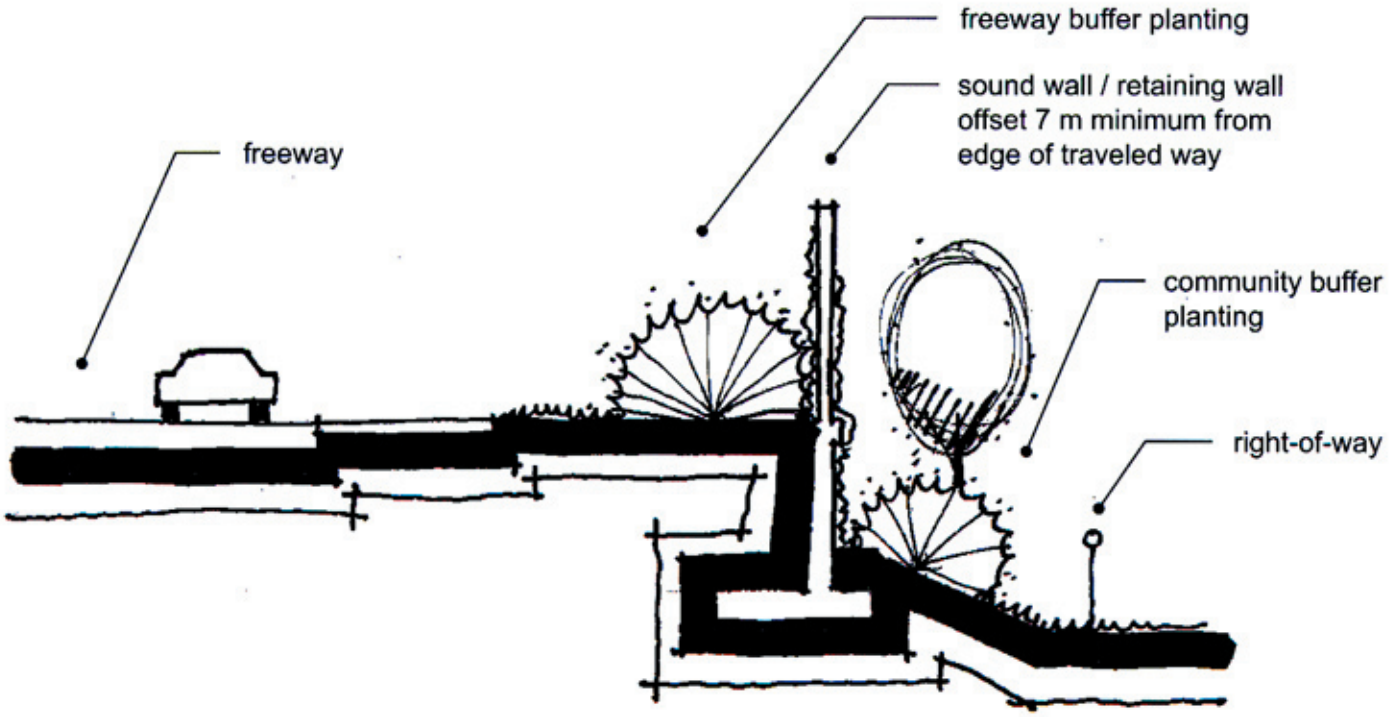
Landscaped Sound Berm - Cut Slope Condition



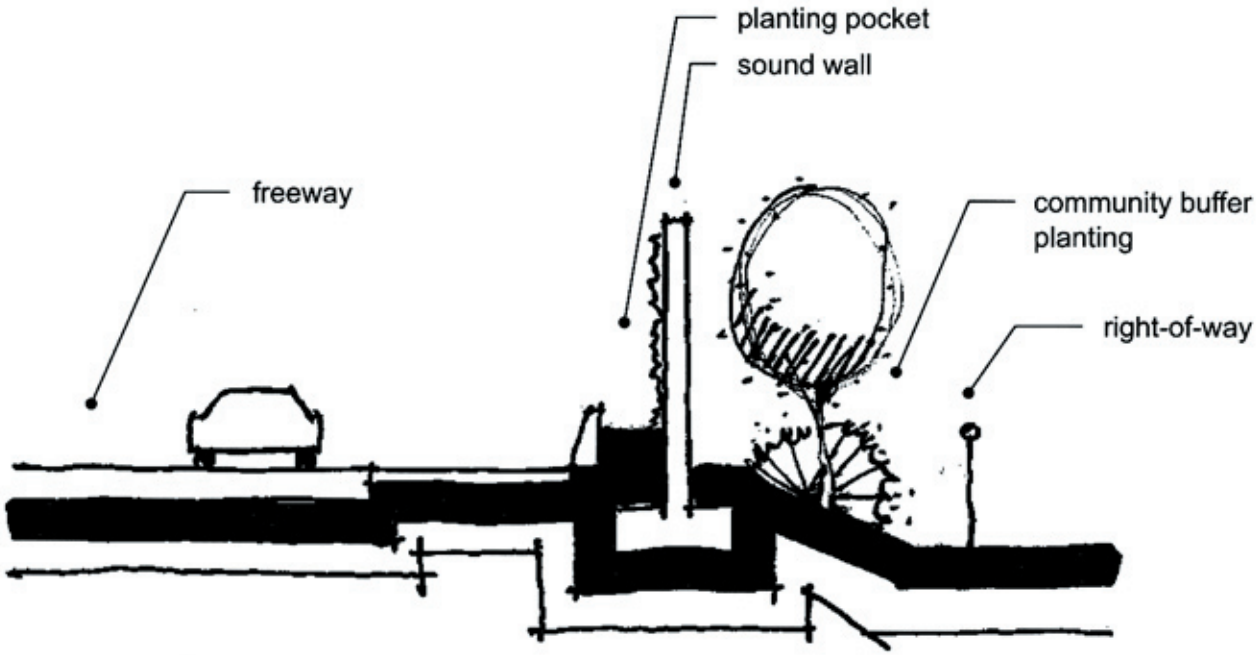
Sound Berm With Retaining Wall



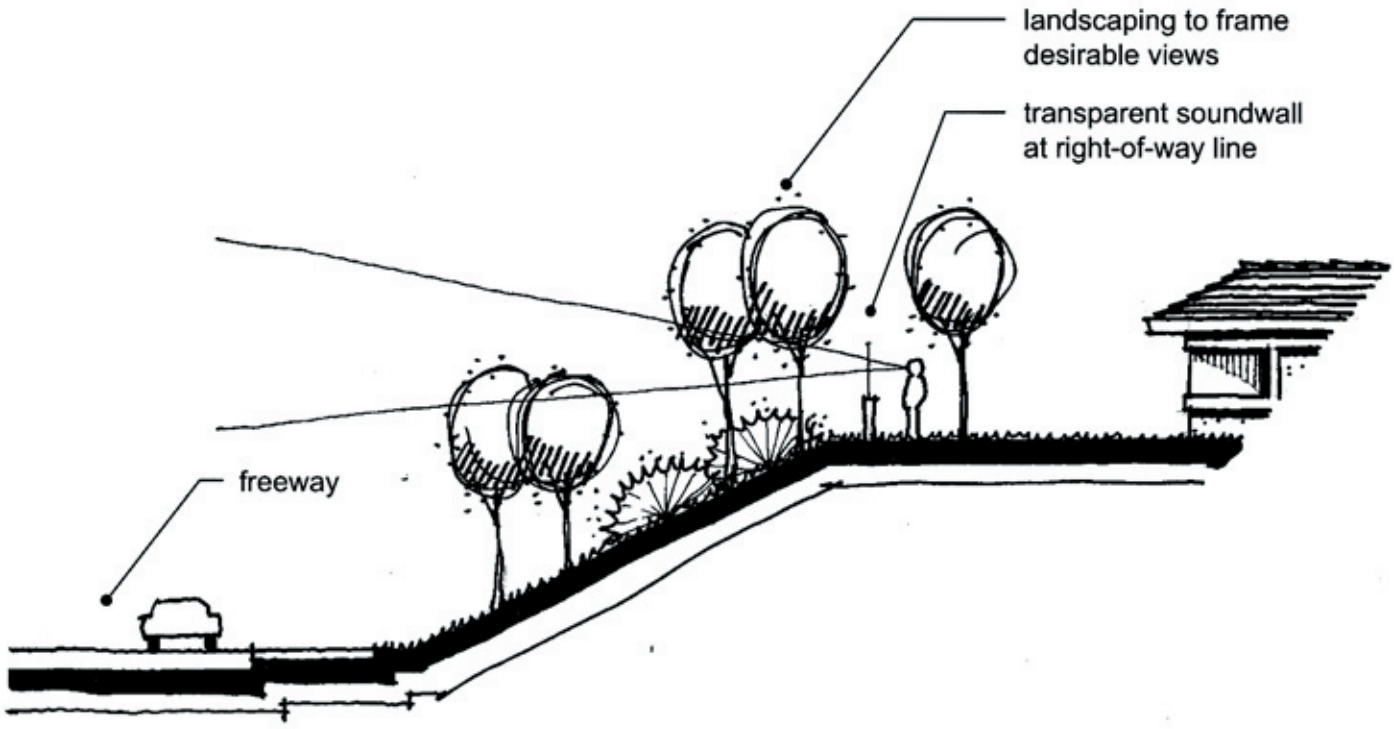
Sound Berm With Sound Wall



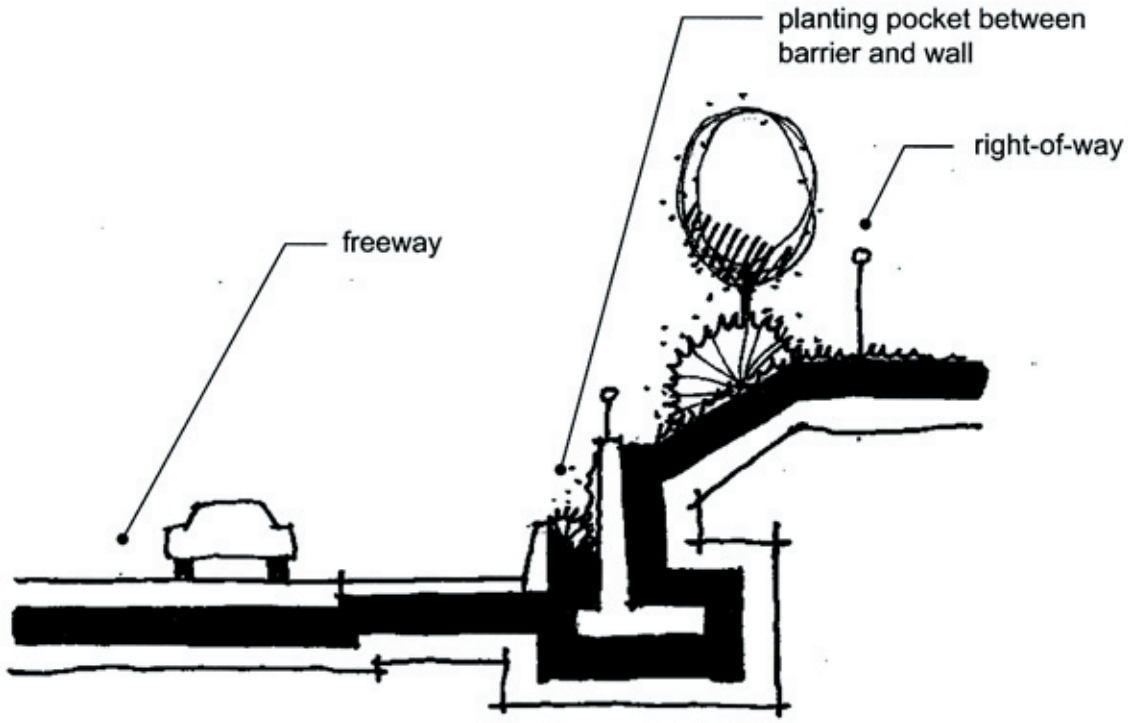
Sound Wall With Landscape Buffers



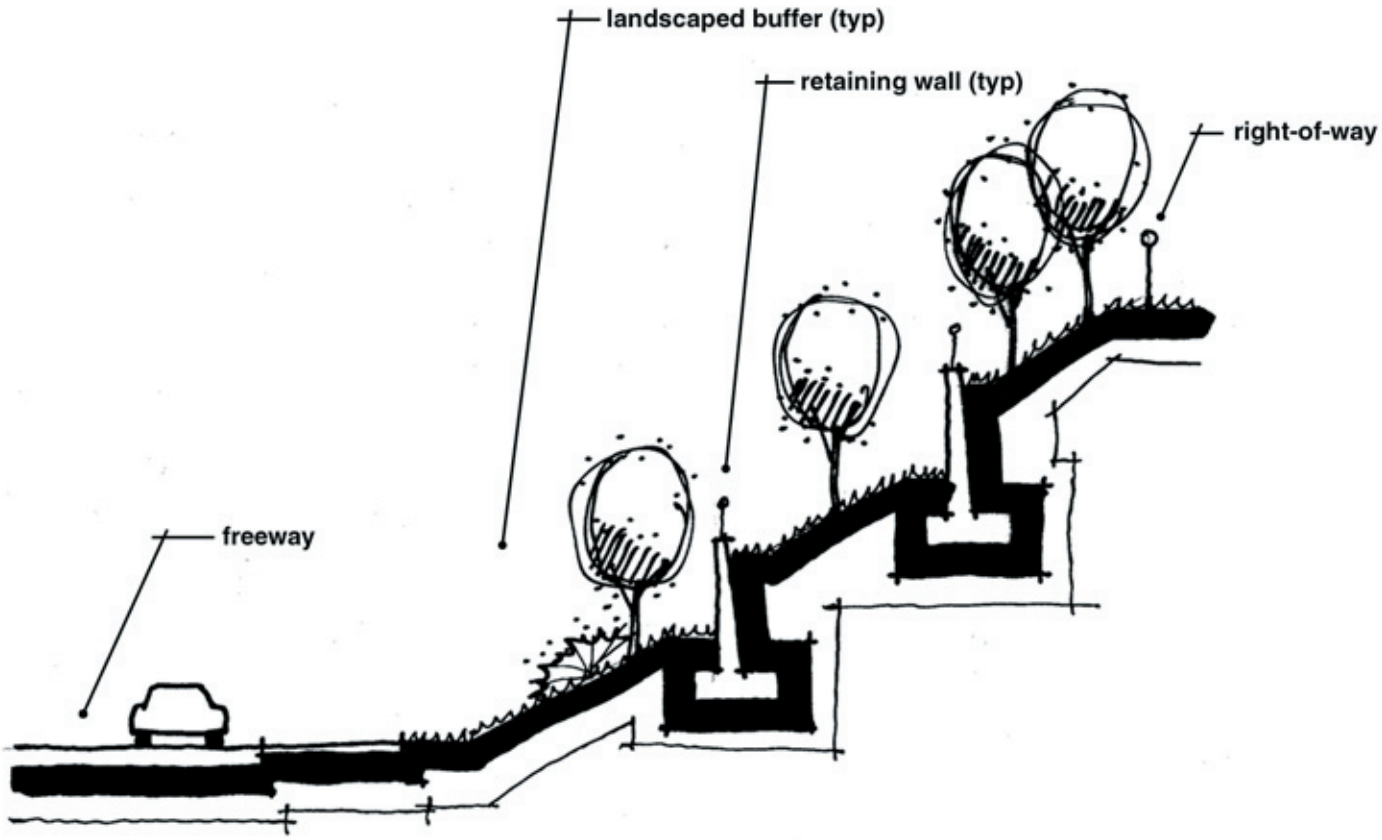
Sound Wall Planting Pocket



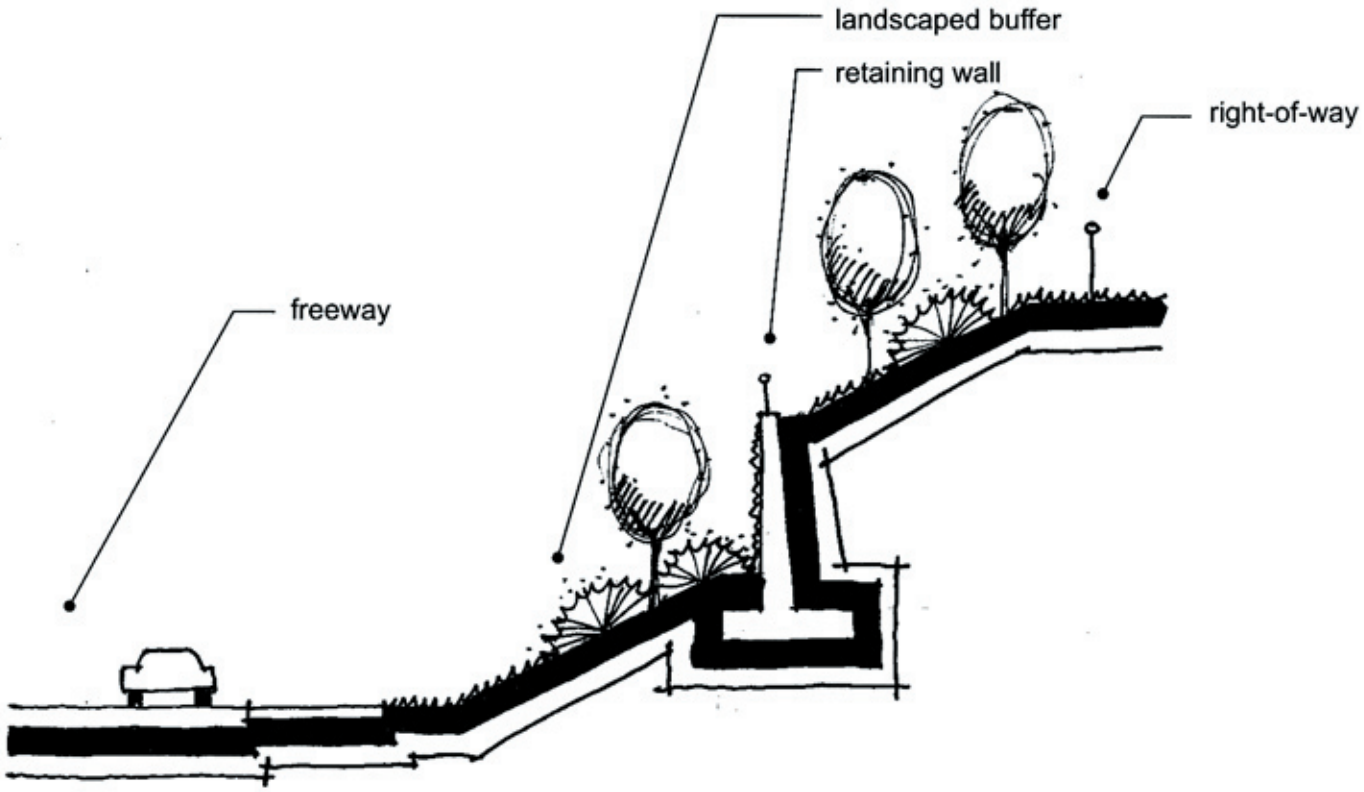
Transparent Soundwall



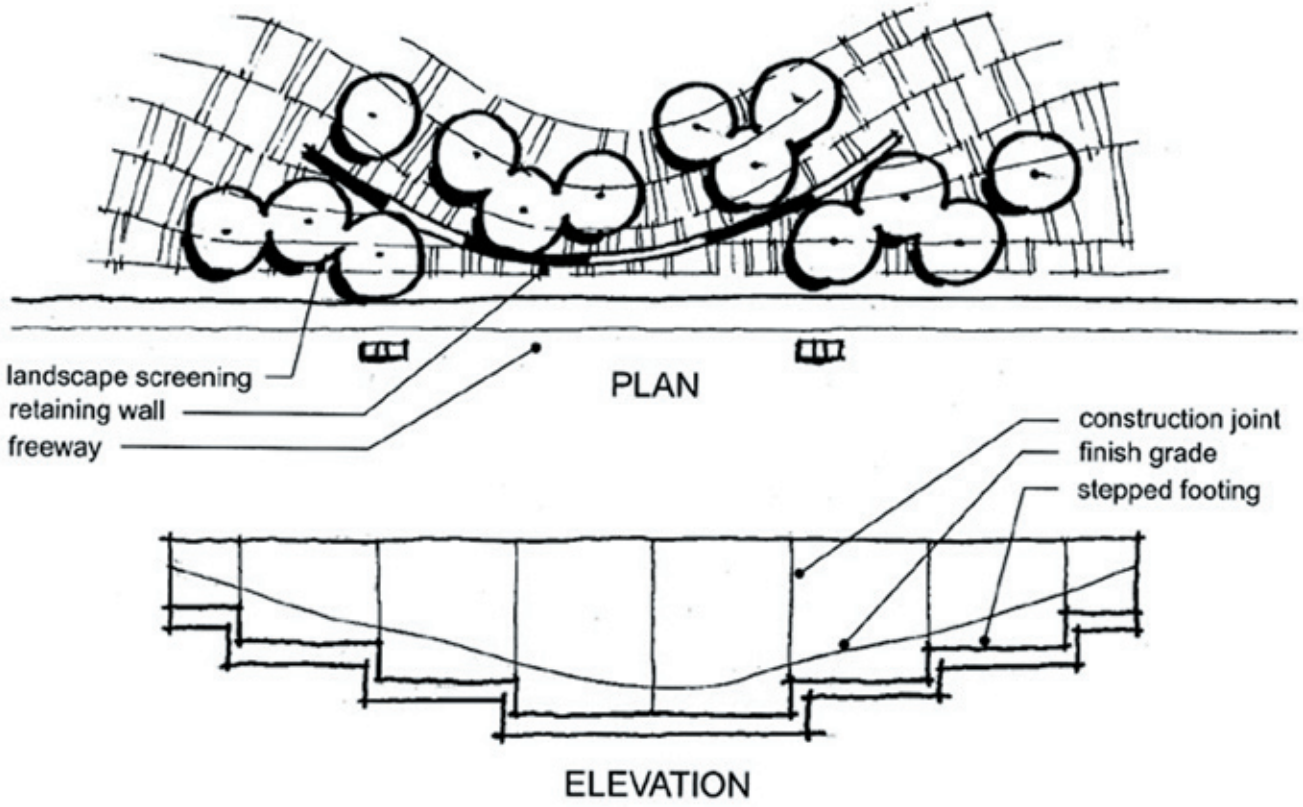
Retaining Wall - Barrier Planting Pocket



Terraced Retaining Walls



Mid - Slope Retaining Wall



Terrain Contoured Retaining Wall